

Claims

1. A glass cutting method in which a portion to be cut of glass (4) is irradiated with a pulse laser (2) in one stroke of relative movement to form a scribe line (7), and then the glass is cut by applying a break force to the scribe line (7),

characterized in that as the pulse laser (2), a pulse laser of an ultraviolet range is used, and that the scribe line (7) is formed to a depth in a range of 1.8 to 6.3% of a thickness of the glass (4) by irradiating the pulse laser (2) while moving the pulse laser (2) relatively so that a total number of pulses at each irradiation portion is in a range of 2,667 to 8,000 pulses.

2. A glass cutting method according to claim 1, characterized in that a pulse width of the pulse laser (2) is less than 100 picoseconds.

3. A glass cutting method according to claim 1 or 2, characterized in that the pulse laser (2) is a third harmonic, a fourth harmonic, or a fifth harmonic of an Nd:YAG laser, Nd:YVO4 laser, or Nd:YLF laser.

4. A glass cutting method according to claim 1, 2, or 3, characterized in that a repetition frequency of the pulse laser (2) is 1 MHz or more.

5. A glass cutting apparatus in which a portion to be cut of glass (4) is irradiated with a pulse laser (2) in one stroke of relative movement to form a scribe line (7), and then the glass is cut by applying a break force to the scribe line (7), the apparatus comprising a laser oscillation apparatus (1) for generating the pulse laser (2) of an ultraviolet range, and a moving stage (5) moving with the glass (4) placed thereon,

characterized in that the scribe line (7) is formed to have a depth in a range of 1.8 to 6.3% of a thickness of the glass (4) by irradiating the pulse laser (2) while moving the moving stage (5) so that a total number of pulses at each irradiation portion is in a range of 2,667 to 8,000 pulses.